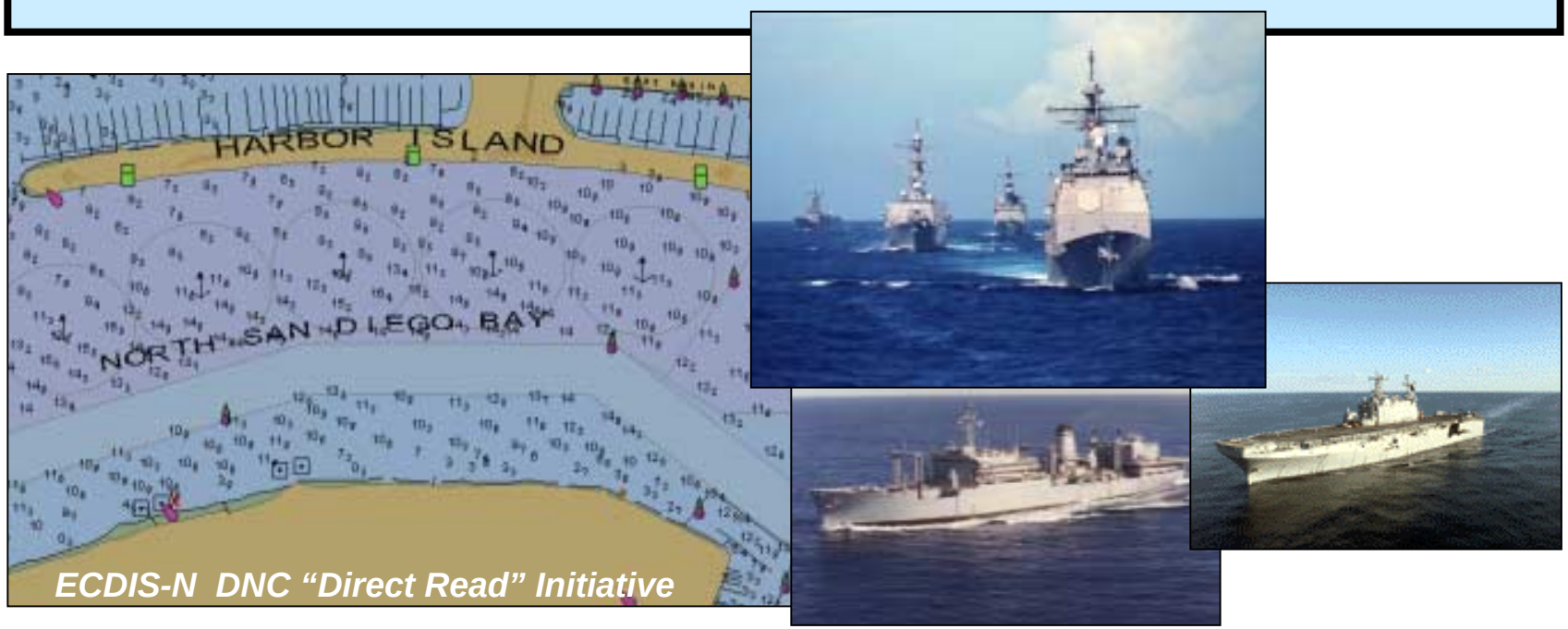
NIMA's"Direct Read" Validation for ECDIS-N NAVCERT

Digital Nautical Chart (DNC®) Test Data Set on CD-ROM



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- NIMA's Role in ECDIS-N NAVCERT
- DNC Test Data Set on CD-ROM
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NIMA's Role in ECDIS-N NAVCERT

- **ECDIS-Navy Policy -** *17 March 1998*
  - NIMA was a partner in drafting the ECDIS-N policy
  - Mandates use of NIMA's VPF digital data to support ECDIS-N
- **OPNAV Instruction 9420.2 -** *15 February 2001*
  - Implements NAVCERT process for ECDIS-N -- Ref: 1998 ECDIS-N policy
  - Aids in the transition from paper chart navigation to an electronic chart environment
  - Assigns responsibilities to NIMA & Navy for ECDIS-N certification process
  - **Paragraph 4. Action a. (1) and (2):**

    (1) Land-based testing on candidate ECDIS-N shall utilize NIMA DTDS to verify that system(s) properly read approved VPF electronic charts… and display using GeoSym **(per Appendix 7)**

    (2) VPF Database Update shall be utilized by ECDIS-N

DNC Test Data Set (DTDS) on CD-ROM

- **Developed by NIMA's Maritime Safety Information Center (MSIC)**
- **DTDS on CD- ROM (v1.1)** - June 2001
  - Developed in accordance to OPNAV Instruction 9420.2 (Appendix 7)
  - Purpose: Test and validate DNC "Direct Read" of ECDIS-N

    Assists Navy in satisfying the NAVCERT requirements for testing the accuracy and performance of ECDIS-N ***charting engines***

  What's included with the CD- ROM?

  (1) VPF sample data sets (***good*** & ***corrupt***), VDU patch files, complete feature and attribute data supported by the DNC specification

  (2) ECDIS-N documentation to support test and certification process

  (3) DTDS Instruction Manual: test procedures/requirements traceability

- **Cover letter included with each CD-ROM**

DTDS on CD-ROM

Test Data Library Sets

H1708280 (Norfolk)	A1708280
H1799999 (Symbols)	A1708281
H1799990 (Symbols)	GEN17A
A1707640	COA17A/TOD017X

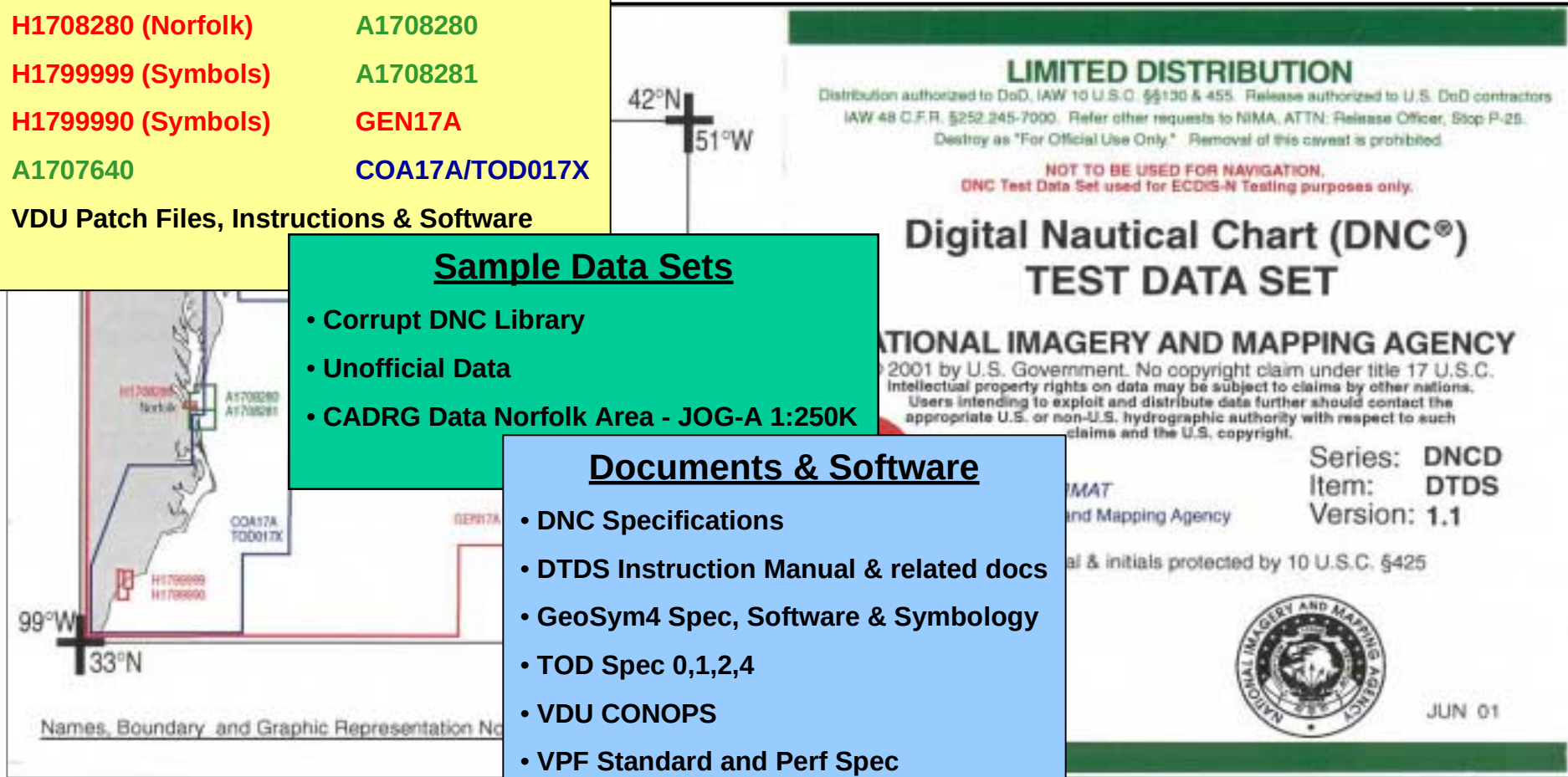
VDU Patch Files, Instructions & Software

Sample Data Sets

- Corrupt DNC Library
- Unofficial Data
- CADRG Data Norfolk Area - JOG-A 1:250K

Documents & Software

- DNC Specifications
- DTDS Instruction Manual & related docs
- GeoSym4 Spec, Software & Symbology
- TOD Spec 0,1,2,4
- VDU CONOPS
- VPF Standard and Perf Spec
- Acrobat Read Software



What's been tested for DNC "DR" ?

SYSTEM PoR	CD Mailed	InTest	InVal	GeoSym3/4	VDU	TOD 0,1,2,4	Status	Re-Test
COMDAC INS (B3B4)*	16-Jul	Yes	No	4	Yes	0	142 D.Rs.	1st Q FY02
COMDAC INS Lite *(SOLARIS)*		No						TBD
Litton VMS (V2100)	16-Jul	Yes	Yes	3	No			1-Oct-01
Raytheon Pathfinder MK2	17-Jul	No						End August
OSL's ECPINS	17-Jul	Yes	Yes	3	No		28 Aug Mtg	Fall 01
CADRT	No							
Others! (TBD by N096)	?							

Note: Next DTDS CD-ROM will contain TOD 1,2,4 (MATT TBD)

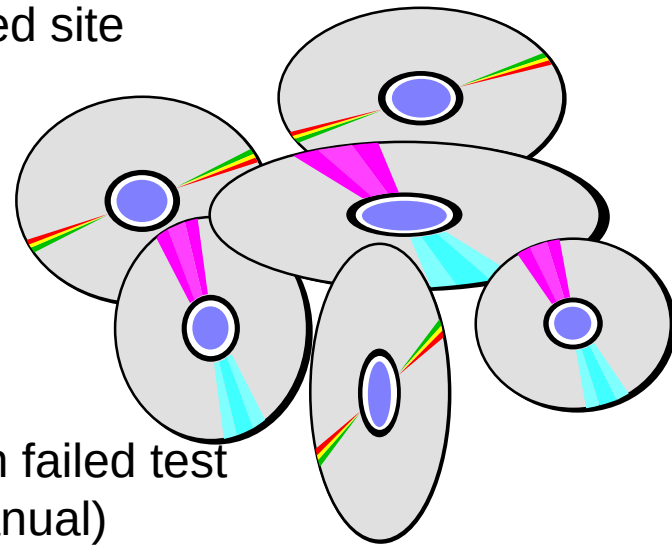
No ECDIS-N charting engine has received full NIMA DR Validation Endorsement!

* First ECDIS-N officially tested per OPNAV Instruction 9420.2.

“Direct Read” Validation Process

How is the DNC “Direct Read” test performed?

- Two NEIT members do test and analysis @ agreed site
- Two ECDIS-N systems engineers assist
- Prefer to test 2 platforms simultaneously
- 2 to 3 days required
- Discrepancies are annotated and logged for each failed test (Appendix 7 of OPNAV Inst 9420.2/Instruction Manual)
- Accuracy test (bearings & positional accuracy's)
- Symbology test based on GeoSym 4
- Functional/Operational scenarios



Near & Long Term Goals

Short-Term:

- Complete DNC "DR" Test for primary ECDIS-N *Charting Engines*

  - COMDAC INS (B3B4) & NAVSSI (SOLARIS) Lite for 2 BATGRU in FY02
  - Litton VMS

- Publish final version of DTDS on CD-ROM with TODs 1, 2, 4 data
- Endorse the Direct Read requirement of ECDIS-N via formal letter

ISSUE: *Navy lacks official guidance for ECDIS-N TOD feature display requirement when used with DNC for submerged navigation (Base/Standard)*

Long-Term:

- Upon completion of full "DR" validation of VMS and COMDAC INS, hand off the DNC "DR" testing to SPAWARSYSCEN - Little Creek
- Advise N096 & SPAWARSYSCEN - Little Creek

NIMA ECDIS-N Implementation Team (NEIT)

Maritime Safety Information Center (MSIC)

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Navy Customer Support Division (DFN)

Coordination & Scheduling:

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Summary

- Goal: VALIDATE USN primary Programs of Record Chart Engines by FY02
- NIMA has assisted the Navy in drafting the ECDIS-N policy & OPNAV Inst 9420.2
- Appendix 7 of OPNAV Inst 9420.2 stipulates NIMA tests using DTDS
- DTDS V1.1 CD-ROM made available to ECDIS-N developers
- Initial test of COMDAC INS completed
  - VMS, OSL ECPINS, and Klein (Raytheon) on deck
- DR Test requires approximately 2 to 3 days @ developers site
- Relinquish NIMA test role to SPAWARSYSCEN - LC

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Series: DNCD
Item: DTDS
Version: 1.1

Questions?